



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,323	12/15/2000	Anders Lundqvist	027557-077	8967
27045	7590	01/31/2006	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			DANIEL JR, WILLIE J	
			ART UNIT	PAPER NUMBER
			2686	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/736,323

Applicant(s)

LUNDQVIST ET AL.

Examiner

Rafael Perez-Gutierrez

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22, 25, and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2686

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 9, 2005 has been entered. **Claims 1-22, 25, and 26** are now pending in the present application.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-3, 10-14, 21, 22, 25, and 26** are rejected under 35 U.S.C. 102(e) as being anticipated by Haberman et al. (U.S. Pat. No. 6,035,197).

Art Unit: 2686

Regarding **claims 1 and 12** Haberman et al. disclose a mobile cellular telecommunications network employing macro-diversity and a method for controlling the same (A method and a system for establishing various radio connections over the same radio spectrum in a CDMA system; *col. 2, line 64 thru col. 3, line 4*), wherein a mobile station can establish a plurality of simultaneous radio links with digital cells (Wherein the digital cells can be digital/analog cells both digital cellular communications and analog cellular communications; *col. 7, lines 14-20*) in the network (Base stations comprising scanning receivers and pilot signal transmitters for establishing simultaneous radio connections over the same radio spectrum in a CDMA cellular communication system, furthermore generating an ACTIVE SET for identifying radio connections associated with cells through which the mobile station is communicating; *col. 1, lines 36-40; col. 2, lines 47-51; col. 9, lines 2-6; Fig. 1, items 50 and 51*), wherein the digital cells of the network are considered in groups (A cellular communication system having a digital portion including a group of digital cells and an analog portion including a group of analog cells; *col. 7, lines 11-24; Fig. 1*), and wherein, when determining whether to establish a new radio link between a mobile station and a new digital cell, the network applies a quality criterion to the new link (Classifying pilot signals associated with a cell into an active set according to a satisfied criteria; *col. 9, lines 2-6*), which depends on whether the new digital cell belongs to any group with which the mobile station does not already have a link (Wherein a mobile station has already establish communications with the digital portion or group of the system, and wherein the new candidate cell is an

Art Unit: 2686

analog cell to which the mobile station does not already have a link, furthermore an active set being exclusively comprised of digital cells, until the mobile station is handed off to an analog cell; *col. 9, lines 33-46; col. 10, lines 29-67; Fig. 3*).

Regarding **claim 2 and claim 13**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein the network applies a more easily satisfied criterion to the establishment of a new link with a digital cell (Wherein the digital cells can be digital/analog cells both digital cellular communications and analog cellular communications; *col. 7, lines 14-20*) in one or more groups with which the mobile station already has a link (Wherein if the candidate cell integrates the digital group of cells a more easily satisfied criteria is applied in order to determine eligibility for the ACTIVE SET; *col. 10, lines 9-16; Fig. 3, steps S2 and S4*), and a less easily satisfied criterion to the establishment of a new link with a cell in a group with which the mobile station currently has no link (Wherein if the candidate cell integrates the analog group of cells a second criteria or less easily satisfied criteria is applied in order determine eligibility for handing off communications to an analog cell; *col. 10, lines 45-50; Fig. 3, steps S4 and S6*).

Regarding **claim 3 and claim 14**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein the quality

Art Unit: 2686

criterion relates to a signal quality level (Wherein the quality criteria relies upon the pilot signal strength of the candidate cell and an active set; *col. 10, lines 6-16*).

Regarding **claim 10 and claim 21**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, wherein each mobile station has an active list of digital cells to which it has radio links (An active set which identifies pilot signals or radio connections associated with cells through which the mobile station is to communicate; *col. 9, lines 7-9*), and the criteria for establishing a new radio link are set relative to the quality of the radio links to cells on the active list (Measuring the pilot signals from the cells in the active set and determining whether the signal strength of those cells in the active set exceeds a predetermined threshold; *col. 10, lines 45-60*).

Regarding **claim 11 and claim 22**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same, which uses Code Division Multiple Access (*col. 7, lines 11-16*).

Regarding **claims 25 and 26**, Haberman et al. disclose method for performing a handover in a mobile telecommunications network (A method for providing handoff in a cellular telecommunication network; *col. 6, lines 19-24*), the method comprising: allocating a plurality of network digital cells (Wherein the digital cells can be digital/analog cells both digital cellular communications and analog cellular

Art Unit: 2686

communications; *col. 7, lines 14-20*) into a plurality of groups (A cellular communication system having a digital portion including a group of digital cells and an analog portion including a group of analog cells; *col. 7, lines 11-24; Fig. 1*); providing a mobile station adapted to establish a plurality of simultaneous radio connections with the plurality of network digital cells (Base stations comprising scanning receivers and pilot signal transmitters for establishing simultaneous radio connections over the same radio spectrum in a CDMA cellular communication system, furthermore generating an ACTIVE SET for identifying radio connections associated with cells through which the mobile station is communicating; *col. 1, lines 36-40; col. 2, lines 47-51; col. 9, lines 2-6; Fig. 1, items 50 and 51*); establishing an active set of digital cells for the mobile station wherein the active set of digital cells establish radio connections with the mobile station (Classifying pilot signals associated with a cell into an active set according to a satisfied criteria; *col. 9, lines 2-6*), and wherein at least one digital cell in the active set is a member of a first group of the plurality of groups (Wherein the ACTIVE SET can comprise digital cells which integrate the digital portion or group of the cellular communication system; *col. 7, lines 11-24; Fig. 1*); determining if a candidate digital cell should be added to the active set of digital cells (*Fig. 3*); wherein the determining comprises: determining if the candidate digital cell is a member of the first group (Determining if the pilot signal associated with the candidate cell is either a digital or analog cell; *col. 10, lines 30-32; Fig. 3, step S4*); if the candidate digital cell is a member of the first group, then applying a first threshold standard to determine if the candidate

Art Unit: 2686

digital cell should be added to the active set (If the candidate cell integrates the digital group of cells a first predetermined threshold  $T_{hl}$  is applied in order to determine eligibility for the ACTIVE SET; *col. 10, lines 9-16; Fig. 3, steps S2 and S4*); if the candidate digital cell is not a member of the first group, then applying a second threshold standard to determine if the candidate digital cell should be added to the active set (If the candidate cell integrates the analog group of cells a second predetermined threshold value  $T_{drop}$  is applied in order to determine eligibility for handing off communications to an analog cell; *col. 10, lines 45-50; Fig. 3, steps S4 and S6*).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2686

3. **Claims 4 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Achour et al. (WO 01/03464).

Regarding **claim 4** and **claim 15**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. Haberman et al. fail to clearly specify a relationship between the time period in which a signal quality level is satisfied and the mobile telecommunications network.

In the same field of endeavor, Achour et al. disclose a signal quality criteria for a respective base station threshold in which the time period (handoff transition) or “time drop” depends upon the threshold uphold (*Page 2, lines 18–23*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. mobile cellular telecommunications network and method for controlling the same to uphold a signal in between cell groups when the performance level falls or exceeds a threshold as taught by Achour et al. for the purpose of allowing better continuity when the mobile station is transitioning between groups avoiding to drop the previous radio link establishment.

4. **Claims 5-7 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Lind et al. (U.S. Pat. No. 6,163,694).

Regarding **claim 5** and **claim 16**, and as each applied respectively to claim 1 and claim 12, Haberman et al. disclose the aforementioned mobile cellular

Art Unit: 2686

telecommunications network and method for controlling the same. Haberman et al. fail to clearly specify, wherein a plurality of layers of groups can be defined, such that each digital cell may be in one group within each layer.

In the same field of endeavor, Lind et al. disclose a method and an apparatus for standby state cell selection in a layered cellular telephone system, comprising a plurality of layers of groups (macro/“umbrella” cell, micro cell, and micro cell), each cell being in one group within each layer (*Fig. 1, col. 2, line 67 thru col. 3, line 7*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. mobile cellular telecommunications network and method for controlling the same to categorize different groups of cells into hierarchical layers as taught by Lind et al. for the purpose of providing an enhanced level of capacity which can be configured for individual circumstances and which provides services despite an extremely high demand within a very small geographical area.

Regarding **claim 6 and claim 17**, and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Lind et al. disclose an umbrella or macro cell served by a base station as a high hierarchy level overlaying a group of micro cells located within the overall coverage area of the macro cell (*col. 1, lines 49-59*).

Art Unit: 2686

Regarding **claim 7 and claim 18** and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Haberman et al. disclose wherein cells associated with one radio network controller are considered to be in the same group (MTSO; *col. 1, lines 23-27; col. 2, lines 27-31; Fig. 1, item 30*).

5. **Claims 8-9 and 19** are rejected under 35 U.S.C. 103(a) as unpatentable Haberman et al. (U.S. Pat. No. 6,035,197) in view of Lind et al. (U.S. Pat. No. 6,163,694), further in view of Rinne et al. (U.S. Pat. No. 6,574,473).

Regarding **claim 8 and claim 19**, and as each applied respectively to claim 5 and claim 16, Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same. In addition Lind et al. disclose a plurality of digital cell groups each associated with a serving base station (A plurality of macro cells each served by a base station as a high hierarchy level overlaying a group of micro cells located within the overall coverage area of the macro cell; *col. 1, lines 49-59; col. 3, lines 32-36; Fig. 1, items L1, C1-CN*). Furthermore, in addition, Haberman et al. discloses wherein digital cells associated with a radio network controller are considered to be in another group (MTSO that control handoff operations among a cell group; *col. 1, lines 23-27; col. 2, lines 27-31; Fig. 1, item 30*). Haberman et

Art Unit: 2686

al. in view of Lind et al. fail to clearly specify wherein digital cells associated with a second radio network controller are considered to be in a group.

In the same field of endeavor, Rinne et al. disclose a 3<sup>rd</sup> generation cellular system comprising plurality of radio network controllers (*Fig. 4, RNC*) each associated with a plurality of base stations (*Fig. 4, BS*) or cell groups (*col. 3, lines 9-18; Figure 4; Fig. 7*); the base stations and cells groups as an integral part of the telecommunications network.

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made Haberman et al. in view of Lind et al. disclose the aforementioned mobile cellular telecommunications network and method for controlling the same comprising a singular radio network controller to include a plurality of network controllers compounding an entire communications network as taught by Rinne et al. for the purpose of categorizing the parameters and the criteria for priority radio link establishment selection in a telecommunications network employing macro-diversity.

Regarding **claim 9**, and as applied to claim 5, Haberman et al. in view of Lind et al. disclose the aforementioned mobile-layered cellular telecommunications network, wherein a less satisfied and a more satisfied network quality criterion for the establishment of radio links is applied to cells groups associated with a base station, Haberman et al. in view of Lind et al. fail to clearly specify a network quality criterion for the establishment of radio links with cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

Art Unit: 2686

In the same field of endeavor Rinne et al. disclose a criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (*col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. in view of Lind et al. mobile-layered cellular telecommunications network including a quality criterion for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al. for the purpose of enhancing radio communications performance when a mobile station movement is transitioning within a relative great scale, furthermore enhancing the reliability of such components establishing radio links about the telecommunications network.

6. **Claim 20** is rejected under 35 U.S.C. 103(a) as unpatentable over Haberman et al. (U.S. Pat. No. 6,035,197) in view of Rinne et al. (U.S. Pat. No. 6,574,473).

Regarding **claim 20**, and as applied to claim 12, Haberman et al. disclose the aforementioned method, wherein a less satisfied and a more satisfied network quality criterion for the establishment of radio links is applied to digital cells groups associated with a base station. Haberman et al. fail to clearly specify a network quality criterion for

Art Unit: 2686

the establishment of radio links with digital cell groups associated with a radio network controller (base station controller) which the mobile station currently has no radio link.

In the same field of endeavor Rinne et al. disclose a criterion for cell groups associated with a radio network controller (base station controller) for the establishment of radio links with a mobile station, where handover between radio network controllers are made based on the transition of the mobile station between the cells (coverage areas) provided by the base stations where such base stations are associated with different radio network controllers (*col. 1, lines 53-59; col. 4, lines 45-48; col.4, lines 56-58*).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention was made to have Haberman et al. method for controlling a mobile cellular telecommunications network including a quality criterion for the establishment of radio links with cells associated with different radio network controllers as taught by Rinne et al. for the purpose of enhancing radio communications performance when a mobile station movement is transitioning within a relative great scale, furthermore enhancing the reliability of such components establishing radio links about the telecommunications network.

### ***Conclusion***

7. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450

Art Unit: 2686

Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rafael Perez-Gutierrez whose telephone number is (571) 272-7915. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-

Art Unit: 2686

2600.

A handwritten signature in black ink, appearing to read 'Rafael Perez-Gutierrez'.

*Rafael Perez-Gutierrez*

R.P.G./rpg

**RAFAEL PEREZ-GUTIERREZ**  
**PRIMARY EXAMINER**

October 17, 2005